

How complex is the classification of transitive homeomorphisms?

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We prove that there is a Borel reduction of the homeomorphism equivalence relation (ER) of zero-dimensional compact metrizable spaces to the conjugacy ER of transitive Cantor set homeomorphisms. We also prove that the homeomorphism ER of absolute retracts (i.e. retracts of the Hilbert cube) is Borel reducible to the conjugacy ER of transitive Hilbert cube homeomorphisms.

By using already known results about the complexity of the above mentioned homeomorphism ERs we identify the exact complexity of conjugacy ERs of both transitive Cantor set maps and transitive Hilbert cube maps. Both the results are achieved by using essentially the same technique. Further, we discuss the problem of classification minimal maps.